

# WEST Search History

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<input type="checkbox"/>	L20	L17 and (IEDs).clm.	1
<input type="checkbox"/>	L19	L17 and (intelligent end device).clm.	0
<input type="checkbox"/>	L18	L17 and (intelligent near device).clm.	0
<input type="checkbox"/>	L17	(power management control).clm.	110
<input type="checkbox"/>	L16	5,862,391.pn.	1
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<input type="checkbox"/>	L1	(717/100  717/101  717/102  717/103  717/104  717/105  717/106  717/107  717/108  717/109  717/110  717/111  717/112  717/113  717/120  717/121  717/122).ccls.	3407

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L20: Entry 1 of 1

File: USPT

Oct 18, 2005

US-PAT-NO: 6957158

DOCUMENT-IDENTIFIER: US 6957158 B1

TITLE: High density random access memory in an intelligent electric device

DATE-ISSUED: October 18, 2005

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Hancock; Martin A.	Victoria			CA
Taylor; Aaron J.	Brentwood Bay			CA
Lightbody; Simon H.	Victoria			CA

US-CL-CURRENT: [702/61](#); [340/870.2](#), [365/112](#), [365/158](#), [365/200](#), [438/128](#), [438/289](#), [702/176](#), [702/62](#),  
[702/64](#), [709/224](#), [710/308](#)

CLAIMS:

We claim:

1. An energy device for monitoring electrical energy delivered through an electric circuit, the energy device comprising: a sensor configured to sense an operating characteristic of the electric circuit and generate digital samples indicative of the operating characteristic; a memory coupled to the sensor, the memory including at least one portion of high density non-volatile memory, the memory having an endurance of at least 1,000,000,000 erase events, at least a portion of the memory being configured to store data, wherein the memory is further operative to store operating data and is ready to provide device operations to at least one microprocessor as soon as power is applied to the energy device; at least one data interface; and the microprocessor coupled to the memory and to the data interface, the microprocessor configured to provide the data from the memory to the data interface.
2. The energy device of claim 1, wherein the sensor comprises an analog sensor configured to generate an analog signal indicative of the operating characteristic; and, an analog to digital converter coupled with the sensor and operative to convert the analog signal to one or more digital samples.
3. The energy device of claim 1, wherein the sensor comprises a digital sensor configured to directly generate one or more digital samples indicative of the operating characteristic.
4. The energy device of claim 1, wherein at least one data interface is an external communication port.
5. The energy device of claim 1, wherein at least one data interface is a user display.
6. The energy device of claim 1, wherein the operating characteristic is the voltage of the electric circuit.
7. The energy device of claim 1, wherein the operating characteristic is indicative of

current delivered through the electric circuit.

8. The energy device of claim 1, wherein the operating characteristic is indicative of energy delivered through the electric circuit.
9. The energy device of claim 1, wherein the energy device is a revenue meter and the data stored in the memory is indicative of energy supplied to a consumer site.
10. The energy device of claim 1, wherein the energy device is a relay.
11. The energy device of claim 1, wherein the energy device is a power quality device.
12. The energy device of claim 1, wherein the data comprises digital samples.
13. The energy device of claim 1, wherein the data comprises setup data.
14. The energy device of claim 1, wherein the high density memory comprises non-destructive read out ferroelectric random access memory.
15. The energy device of claim 1, wherein the high density memory comprises polymeric ferroelectric random access memory.
16. The energy device of claim 1, wherein the high density memory comprises one transistor dynamic RAM (1T-DRAM).
17. The energy device of claim 1, wherein the high density memory comprises enhanced SRAM.
18. The energy device of claim 1, wherein the high density memory comprises magnetoresistive random access memory.
19. The energy device of claim 1, wherein the high density memory comprises organic random access memory.
20. The energy device of claim 1, wherein the high density memory comprises chalcogenide random access memory.
21. The energy device of claim 1, wherein the high density memory comprises holographic random access memory.
22. The energy device of claim 1, wherein the high density memory comprises phase-state low-electron drive memory.
23. The energy device of claim 1, wherein the high density memory comprises single-electron random access memory.
24. The energy device of claim 1, wherein the device is operational upon the microprocessor's execution of the device operations.
25. The energy device of claim 1, where the data comprises security data.
26. An energy device for monitoring electrical energy delivered through an electric circuit, the energy device comprising: a sensor configured to sense an operating characteristic of the electric circuit and generate digital samples indicative of the operating characteristic; a memory coupled to the sensor, the memory comprising a portion of high density, non-volatile memory operative to store data when no electrical power is supplied to the memory, the memory having an endurance of at least 1,000,000,000 erase events, and the memory being configured to store data, wherein the memory is further operative to store operating data and is ready to provide device operations to at least one microprocessor as soon as power is applied to the energy device; at least one data

interface; and the microprocessor coupled to the memory and to the data interface, the microprocessor configured to provide the data from the memory to the data interface; wherein the microprocessor is operative to use user-programmable instructions stored in the memory.

27. The energy device of claim 26, wherein the sensor comprises an analog sensor configured to generate an analog signal indicative of the operating characteristic; and, an analog to digital converter coupled with the sensor and operative to convert the analog signal to one or more digital samples.

28. The energy device of claim 26, wherein the sensor comprises a digital sensor configured to directly generate one or more digital samples indicative of the operating characteristic.

29. The energy device of claim 26, wherein the operating characteristic is the voltage of the electric circuit.

30. The energy device of claim 26, wherein the energy device is a revenue meter and at least a portion of the data stored in the memory is indicative of energy supplied to a consumer site.

31. The energy device of claim 26, wherein the energy device is a relay.

32. The energy device of claim 26, wherein the energy device is a power quality device.

33. The energy device of claim 26, wherein the data comprises digital samples.

34. The energy device of claim 26, wherein the data comprises setup data.

35. The energy device of claim 26, wherein the non-volatile memory comprises non-destructive read out ferroelectric random access memory.

36. The energy device of claim 26, wherein the non-volatile memory comprises polymeric ferroelectric random access memory.

37. The energy device of claim 26, wherein the non-volatile memory comprises magnetoresistive random access memory.

38. The energy device of claim 26, wherein the non-volatile memory comprises organic random access memory.

39. The energy device of claim 26, wherein the non-volatile memory comprises chalcogenide random access memory.

40. The energy device of claim 26, wherein the non-volatile memory comprises holographic random access memory.

41. The energy device of claim 26, wherein the non-volatile memory comprises phase-state low-electron drive memory.

42. The energy device of claim 26, wherein the non-volatile memory comprises single-electron random access memory.

43. An energy device for monitoring electrical energy delivered through an electric circuit, the energy device comprising: a sensor configured to sense an operating characteristic of the electric circuit and generate digital samples through an analog to digital converter indicative of the operating characteristic; an organic random access memory coupled to the analog to digital converter, the organic random access memory being configured to store data in response to the digital samples, wherein the memory is

operative to store operating data and is ready to provide device operations to at least one microprocessor as soon as power is applied to the energy device; at least one data interface coupled with the sensor; and the microprocessor coupled to the memory and to the data interface, the microprocessor configured to provide the data from the memory to the data interface; wherein the microprocessor is operative to use user-programmable instructions stored in the memory to implement input/output control.

44. The energy device of claim 43, wherein the sensor comprises an analog sensor configured to generate an analog signal indicative of the operating characteristic; and, an analog to digital converter coupled with the sensor and operative to convert the analog signal to one or more digital samples.

45. The energy device of claim 43, wherein the operating characteristic is the voltage of the electric circuit.

46. An Intelligent Electronic Device ("IED") for measuring the delivery of electrical energy from an energy supplier through an electric circuit, the IED comprising: a sensor configured to sense an operating characteristic of the electric circuit and generate digital samples indicative of the operating characteristic; a memory coupled to the sensor, the memory including at least one memory device comprising at least 1 megabytes of non-volatile, solid state storage operative to store data when no electrical power is supplied to the memory, the memory having an endurance of at least 1,000,000,000 erase events and operative to store said digital samples for at least one year, and at least a portion of the memory being configured to store data in the form of logs in response to the digital samples wherein the memory is further operative to store operating data and is ready to provide device operations to a microprocessor as soon as power is applied to the IED; at least one data interface; and the microprocessor coupled to the memory and to the data interface, the microprocessor configured to provide the data from the memory to the data interface; wherein the microprocessor is operative to store information on a power quality event in the memory.

47. The IED of claim 46, wherein the sensor comprises an analog sensor configured to generate an analog signal indicative of the operating characteristic; and, an analog to digital converter coupled with the sensor and operative to convert the analog signal to one or more digital samples.

48. The IED of claim 46, wherein the sensor comprises a digital sensor configured to directly generate one or more digital samples indicative of the operating characteristic.

49. The IED of claim 46, wherein at least a portion of the solid state storage is high density memory.

50. The IED of claim 46, wherein at least a portion of the solid state storage is removable.

51. The IED of claim 46, wherein the capacity of the solid state storage includes at least sixty four megabytes of data sample memory.

52. The IED of claim 46, wherein the capacity of the memory includes at least one gigabyte of data sample memory.

53. The IED of claim 46, wherein a portion of the memory is removable.

54. The IED of claim 46, wherein the operating characteristic is the voltage of the electric circuit.

55. The IED of claim 46, wherein the operating characteristic is indicative of power delivered through the electric circuit.

56. The IED of claim 46, wherein the IED is a revenue meter and the data stored in the

memory is indicative of energy supplied to a consumer site.

57. The IED of claim 46, wherein the IED is a relay.

58. The IED of claim 46, wherein the data comprises digital samples.

59. The IED of claim 46, wherein the data comprises setup data.

60. The IED of claim 46, wherein at least a portion of the memory comprises at least one memory type selected from the group comprising holographic storage and fractal cluster glass memory.

61. The IED of claim 46, further wherein the solid state memory comprises at least one memory type selected from the group comprising polymeric ferroelectric random access memory, polymer random access memory, and non destructive read out ferroelectric random access memory.

62. The IED of claim 46, further wherein the solid state memory comprises at least one memory type selected from the group comprising magnetoresistive random access memory, fractal cluster glass random access memory, chalcogenide random access memory, holographic random access memory, phase-state low-electron drive memory (PLEDM), and single-electron-memory.

63. An Intelligent Electronic Device ("IED") for measuring the delivery of electrical energy from an energy supplier through an electric circuit, the IED comprising: a sensor configured to sense an operating characteristic of the electric circuit and generate digital samples indicative of the operating characteristic; a non-volatile solid-state memory coupled to the sensor, the memory having an endurance of at least 1,000,000,000 erase events; at least one data interface; and a microprocessor coupled to the memory and to the data interface, the microprocessor configured to provide the data from the memory to the data interface; wherein a portion of the memory is removable and operative to store digital samples for at least one year, wherein said memory is further operative to store operating data and is ready to provide device operations to the microprocessor as soon as power is applied to the IED.

64. An energy device for monitoring electrical energy delivered through an electric circuit, the energy device comprising: a sensor configured to sense an operating characteristic of the electric circuit and generate digital samples indicative of the operating characteristic; a non-volatile solid-state memory coupled to the sensor, the memory having an endurance of at least 1,000,000,000 erase events; at least one data interface; and at least one microprocessor coupled to the memory and to the data interface, the microprocessor configured to provide the data from the memory to the data interface; wherein the microprocessor is operative to use user-programmable instructions stored in the memory; wherein the memory is operative to store operating data, the memory is ready to provide device operations to the microprocessor as soon as power is applied to the energy device.

65. The energy device of claim 64, wherein at least a portion of the solid state memory is removable.

66. The energy device of claim 64, wherein the user-programmable instructions stored in the memory implement input/output control for the energy device.

67. The energy device of claim 64, wherein the user-programmable instructions stored in the memory implement communication and data file manipulation functions for the energy device.

68. The energy device of claim 64, wherein the user-programmable instructions stored in the memory implement power management control functions for the energy device.

69. The energy device of claim 64, wherein the operating characteristic is indicative of current delivered through the electric circuit.
70. The energy device of claim 64, wherein the microprocessor is operative to store information on a power quality event in the memory.
71. The energy device of claim 70, wherein the power quality event comprises a blackout.
72. The energy device of claim 70, wherein the power quality event comprises a brownout.
73. The energy device of claim 70, wherein the power quality event comprises a surge.
74. The energy device of claim 70, wherein the power quality event comprises a harmonic distortion.
75. The energy device of claim 70, wherein the power quality event comprises an overvoltage.
76. The energy device of claim 70, wherein the power quality event comprises an imbalance.

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L21: Entry 1 of 1

File: USPT

Apr 18, 2006

US-PAT-NO: 7032015  
DOCUMENT-IDENTIFIER: US 7032015 B1

TITLE: System and method for integrating a power system over a network

DATE-ISSUED: April 18, 2006

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Delandro; Kwame	New Britain	CT		US
Cummiskey; Carol	Cromwill	CT		US
Zupa; Anthony M.	Oxford	CT		US

US-CL-CURRENT: [709/222](#); [709/203](#), [709/223](#), [714/36](#), [717/177](#)

CLAIMS:

What is claimed is:

1. A system for integrating a software system over a network, comprising: means for receiving an order for a software system from a user using a user system at a server over the network; means for configuring the user system over the network; and means for installing the software system on the user system over the network; and wherein the software system comprises a power management control system; and further comprising: means for developing at least one software application for the software system; means for customizing a screen design for the software system over the network; means for integrating the at least one software application and the screen design for the application to produce an integrated software system; means for creating supplier links for ordering material over the network; and means for integrating the at least one software application, the supplier and the seen design for the application to produce an integrated software system; and wherein the means for customizing a screen design comprises: means for creating human machine interface project; means for starting up a configuration application over the network; means for using the configuration application to add devices; means for adding trend points to a historical database; means for creating a one line diagram screen; means for creating trend and tabular screens for each device; means for setting passwords for each user; and means for testing the screen design with a dynamic data exchange simulator to ensure functionality.

2. The system of claim 1, wherein the network comprises the Internet.

3. The system of claim 1, further comprising: means for transmitting the order for a software system to a development facility; and means for receiving at least one software application for the software system from the development facility.

4. The system of claim 1, further comprising means for testing the at least one software application.

5. The system of claim 1, further comprising means for developing at least one software application for the software system wherein the developing means comprises: means for receiving user information over the network; means for preparing a project design for the software application based on the user information; means for transmitting the project



design to the user over the network, means for receiving user feedback over the network; and means for revising the project design until the user feedback does not contain change requests.

6. The system of claim 1, wherein the means for installing the software system on a user system over the network comprises: means for installing human machine interface software and the at least one software application onto the user system over the network; and means for transferring the integrated application from a development system to the user system over the network.

7. The system of claim 1, further including means for starting up operation of the software system over the network, wherein the means for starting up operation of the software system over the network comprises means for configuring user devices over the network to support the software system and means for testing the software system on the user system.

8. The system of claim 1, further comprising: means for supporting the software system on the user system over the network after start up.

9. The system of claim 1, further comprising means for starting up operation of the software system over the network.

10. The system of claim 1, wherein the user system comprises at least one of a personal computer and a mainframe.

11. The system of claim 1, wherein the user system comprises a network.

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### **ore...**

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### **Artificial corn hybrid P67 - Patent 6871225**

relates to a **power management control** system (PMCS), and ... Dynamic  
a Exchange (**DDE**) server. The PMCS **DDE** ... for an **intelligent** circuit  
aker or power meter. **Device** objects, shown ...

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**[PDF] POWER LEADER**

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**adding** nodes 23, 25. auto-log on 21. B. boosting performance 20. C. Communications Server 13. D. **device** information 25. Dynamic Data Exchange (DDE) Server 2 ...  
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**esp@cenet description view**

System 10 then creates 194 the **DDE devices** and imports 196 server points for the ... A method for **adding devices** to a **power management control** system (10 ) ...  
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power quality with GE's **Power Management Control** (PMCS) software. The EMS. consists of **intelligent** switchgear, motor controllers, meters connected to ...  
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CIMPLICITY through either **DDE** or OPC communications. Use the **device** communications toolkit ... CIMPLICITY **Power Management Control** System (PMCS) software. ...  
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**[PDF] Power Management Control Systems - More Than Energy Savings ...**

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**[PS] Cooperative Solutions to the Dynamic Management of Communication ...**

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Chapter 1 Introduction The need for **intelligent** resource management is going to ... 4.3.1 **Power Management Control** Protocol The **power management control** ...  
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